

# **Final Winter Construction Plan**



FERC Docket No. CP09-54-000

**November 2010**



## Table of Contents

<b>1.0</b>	<b>Introduction.....</b>	<b>1-1</b>
1.1	Purpose .....	1-2
<b>2.0</b>	<b>Winter Construction Procedures.....</b>	<b>2-1</b>
2.1	Snow Management and Storage.....	2-1
2.1.1	Fremont-Winema Snow Removal and Site Preparation.....	2-2
2.2	Soil Handling: Frozen Soil Conditions .....	2-3
2.3	Snow and Cold Weather Management .....	2-4
2.4	Temporary Erosion and Sediment Control Measures.....	2-4
2.4.1	Temporary Erosion and Sediment Control Measures .....	2-5
2.5	Lowering-in and Backfill .....	2-6
2.6	Hydrostatic Testing: Dewatering .....	2-7
2.7	Access Road Usage and Maintenance .....	2-7
2.7.1	Erosion Control Measures During Spring Thaw.....	2-8
2.8	Spring Thaw Conditions.....	2-8
<b>3.0</b>	<b>Environmental Management .....</b>	<b>3-1</b>
3.1	Winter Inspection and Monitoring Procedures.....	3-1
3.2	Training .....	3-2
3.3	Staffing and Contacts .....	3-2
3.4	Reporting .....	3-2

## List of Tables

Table	Page
Table 3-1 Winter Construction Contact Information.....	3-2



## List of Abbreviations and Acronyms

BLM	Bureau of Land Management
ECD	Erosion Control Device
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
NTP	Notice to Proceed
Plan	Winter Construction Plan
POD	Plan of Development
Project	Ruby Pipeline Project
ROW	right-of-way
Ruby	Ruby Pipeline, LLC



# 1.0 Introduction

The Ruby Pipeline Project (Project), sponsored by Ruby Pipeline, LLC (Ruby), is composed of approximately 675.2 miles of 42-inch diameter natural gas pipeline, along with associated compression and measurement facilities, located between Opal, Wyoming, and Malin, Oregon. The Project also includes an approximate 2.6-mile lateral, under construction in Klamath County, Oregon. The Project right-of-way (ROW) crosses four states: Wyoming, Utah, Nevada, and Oregon.

The Project consists of the following facilities:

- Approximately 675.2 miles of 42-inch-diameter natural gas mainline pipeline,
- Approximately 2.6 miles of 42-inch-diameter natural gas pipeline lateral,
- Eight interconnects located within four measurement facilities,
- Forty-four mainline valves, and
- Four compressor stations.

Construction began in late July 2010, with all facilities originally planned to be in service by March 2011. Ruby intends to complete all of the primary reclamation work, including clean-up, finish grading, permanent erosion and sediment control work, and dormant seeding as soon as practicable; these activities are subject to any changes required to maximize reclamation success. Based on the current schedule, most construction activities on the Project's four construction spreads in Wyoming and Utah are anticipated to be completed by late January, 2011. However, construction spreads 4 through 8 (Nevada and Oregon) will likely not be complete until as late as June 2011. Additional delays in the start of construction, or delays due to skips along the Project route, could result in corresponding delays in the completion of construction activities. Construction of the Oregon pipeline sections is scheduled to take the longest.

The winter construction period and implementation of this Winter Construction Plan (Plan) will be considered to be in effect when any of the following conditions occur:

- The ground is frozen and plating of topsoil occurs;
- Equipment slippage occurs from operating on frozen ground or vehicles moving outside established ROW clearing limits;
- Backfill material freezes to the extent that adequate compaction becomes difficult; and/or
- Topsoil stockpiles are frozen and cannot be uniformly redistributed across disturbed areas or separated from the sub-grade material.

## 1.1 Purpose

Ruby has developed this Plan for the following purposes:

- To provide guidelines for addressing the special considerations and concerns associated with construction and reclamation efforts conducted during winter conditions;
- To describe the ROW stabilization, road maintenance and repairs, and temporary erosion control measures Ruby will implement before final cleanup and reclamation activities are completed in spring or early summer 2011; and
- To describe the monitoring program that Ruby will implement during the winter months to ensure that erosion control measures remain functional and effective until final reclamation activities are completed.



## 2.0 Winter Construction Procedures

### 2.1 Snow Management and Storage

Snow will be removed from the construction workspace where necessary to provide safe and efficient working conditions and to expose soils for grading and excavation. Snow will also be removed where necessary along Project access roads to allow safe access to the ROW.

Ruby will implement some or all of the following methods following significant snow events:

- Ruby will remove, blade, or pack snow on the working side of the ROW to improve driving conditions, when necessary.
- Ruby will limit snow removal from the non-working (spoil) side of the ROW. Excess snow that could affect backfilling and ROW recontouring will be removed to no closer than 3–4 inches of the soil surface to leave a buffer layer to minimize the potential for blading and mixing of the topsoil and subsoil.
- Snow removal equipment must remain within the approved ROW and access road boundaries.
- Snow blading and removal will be limited to the movement of snow. Blading and removal activities must not result in soil or vegetation being pushed, dumped, or blown beyond the original approved ROW and access road boundaries. Snow blading and removal that results in significant deposition of soil and vegetation, as determined by the Environmental Inspectors and Compliance Monitor, outside of the approved workspace will result in the issuance of a noncompliance and a halt to the activity until a resolution is discussed.

In the event of a heavy snow accumulation:

- Snow may be pushed, or lifted and dumped, and stored on an additional 25-foot-wide area adjacent to the existing ROW, access roads and other Project facilities, provided that:
  - Equipment tracks and vehicle tires remain within the original approved ROW or access road boundaries;
  - No soil or vegetation is pushed off the ROW;

- No cultural resources will be adversely impacted;
  - No threatened, endangered, or sensitive species or their habitat will be adversely impacted; and
  - Breaks are left or created in windrowed snow piles to align with gaps in soil piles and trench plugs previously installed to allow cross-ROW wildlife passage.
- Ruby may remove snow from the ROW and deposit it off the ROW using a snow blower without restrictions regarding the distance from the ROW to the deposited snow, provided that:
  - The Contractor ensures that soil and cleared vegetation are not being blown with the snow; and
  - The blown snow is spread relatively evenly to minimize damage to off-ROW woody vegetation or other resources.
- If the Contractors' snow removal methods result in off-ROW damage to vegetation or soils, Ruby will submit a variance requesting approval to make any necessary repairs.

Access roads previously approved for blading, grading, and widening may need to be ripped or scarified to a depth of up to 2 inches to minimize icy, unsafe conditions for the vehicles and equipment. Ruby may add sand or gravel to roads to avoid icy, unsafe conditions for the vehicles.

### **2.1.1 Fremont-Winema Snow Removal and Site Preparation**

Fremont-Winema National Forest Roads 3910 and 3915 are maintained as groomed snow mobile routes. Any snow removal done on behalf of Ruby will maintain a minimum of 4 inches of snow on the entire width of the road bed surface.

The Environmental Inspector (EI) and the Fremont-Winema National Forests will evaluate snow storage locations and obtain approval from the National Forest. If no appropriate sites can be identified, snow must be stockpiled within the approved ROW width or snow may be blown off the ROW into the Forest Service land.

Ruby will implement the following snow removal stipulations specific to the Fremont-Winema National Forest access roads. Snow removal shall be done in a manner to preserve and protect the roads, to the extent necessary to ensure safe and efficient use of the road system, and to prevent excessive erosion damage to roads, streams, and adjacent lands.

Ruby Pipeline shall:

- (1) Remove snow from the entire road surface width, including turnouts.
- (2) Remove snow slides, earth slides, fallen timber, and boulders that obstruct normal road surface width.
- (3) Remove snow, ice, and debris from culverts so that the drainage system will function efficiently at all times.
- (4) Perform all items of snow removal currently to ensure safe, efficient transportation. Work shall be done in accordance with the following minimum standards of performance:
- (5) Deposit all debris, except snow and ice, removed from the road surface and ditches at agreed locations and away from stream channels.
- (6) Not undercut roadbanks nor remove gravel or other selected surfacing material off the roadway surface.
- (7) Ensure that ditches and culverts are kept functional during and following roadway use.
- (8) Not leave snow berms on the road surface. Berms on the shoulder of road shall be removed and/or drainage holes shall be opened and maintained. Drainage holes shall be spaced as required to obtain satisfactory surface drainage without discharge on erodible fills.
- (9) Not use dozers (or other tracked machinery) to plow snow on roads without written approval of the Forest Service.
- (10) Leave a minimum of 2 inches of snow depth to protect the roadway (4 inches left on Forest Roads 3910 and 3915).
- (11) Restore any damage resulting from the snow removal in a timely manner.
- (12) Access roads on the Fremont-Winema National Forest land will not be ripped or scarified.
- (13) Signing or traffic control measures will be used to advise public travel of road work activities.
- (14) Mud will not be tracked onto paved or chip seal roads.

## **2.2 Soil Handling: Frozen Soil Conditions**

The following requirements will be implemented during frozen soil conditions—defined as the presence of frozen soils to a depth of 2 inches or more below the surface.

- Topsoil salvage and segregation is required as described in Section 5.1.3 of the main Plan of Development (POD) and Section IV.B. of Ruby's Upland Erosion Control, Revegetation and Maintenance Plan (POD Appendix D).
- Frozen topsoil stripping activities will be limited to the equipment capable of accurately stripping variable depths of topsoil. It may be necessary to precede

- the grader or dozer with a ripper mounted on a machine with sufficient power to achieve accurate depth penetration. If soils are frozen to the extent that effective segregation of subsoil and topsoil cannot be accomplished without mixing, the topsoil salvage operation will cease until soil conditions improve so the operation can be accomplished in accordance with the topsoil segregation requirements.
- To the extent possible, Ruby will minimize the amount of open trench to reduce the amount of snow that will have to be moved. Welding could take place in front of ditching, in appropriate terrain, to minimize dealing with frozen topsoil and spoil storage.
  - Where topsoil or spoil stockpiles remain in place during the winter, breaks in the topsoil or spoil pile at drainage crossings will be left to allow runoff and snowmelt to be diverted off the ROW and minimize interference with spring runoff.
  - The EI will suspend final clean-up activities and topsoil placement if top soils cannot be evenly distributed. If the top soils are frozen, a two-pass technique may be used, in which the frozen soil is spread across the ROW and then evenly spread after it is thawed by the sun.
  - If topsoil replacement and/or revegetation activities are suspended due to frozen topsoil conditions, normal temporary ROW stabilization procedures will be applied as ground conditions permit. Where final clean-up and restoration has not been completed, the ROW will be left in a significantly roughened condition to reduce potential for erosion during snowmelt.

## **2.3 Snow and Cold Weather Management**

The following measures will be implemented after significant snow events are followed by an extended period of freeze. However, if a snow event is followed immediately by a period of melting, normal Project procedures for handling soil or erosion control will still be in effect.

- Where cleaning is required, contractors' equipment will be cleaned using compressed air instead of water, following protocols established in Ruby's Noxious and Invasive Weed Plan (POD, Appendix H).
- Access roads will be cleared of snow to permit access to the ROW, as outlined in Section 2.1, above.
- Snow will be removed from topsoil or spoil storage areas prior to trenching. Snow removal equipment will remain in the approved construction ROW.

## **2.4 Temporary Erosion and Sediment Control Measures**

Temporary erosion and sediment control measures will be installed and maintained, to the extent possible, during winter construction in all areas where final clean-up and reclamation efforts have not been completed. The goal of the temporary erosion and

sediment control measures is to protect against accelerated erosion and sedimentation of waterbodies and other off-ROW areas.

Temporary erosion and sediment control measures may include installation of sediment barriers (such as silt fence or straw bale barriers), temporary slope breakers (waterbars), application of mulch or installation of erosion control matting, temporary seeding, and/or installation of other sediment control measures where necessary and where identified by the EI. These areas will be monitored until reclamation has been completed and the ROW stabilized. The erosion and sediment controls will be maintained and repaired as necessary as identified in *Ruby's Plan* and *Procedures* (POD, Appendices D and F, respectively).

- All temporary erosion controls shall be properly maintained during Project construction and reinstalled as necessary until permanent erosion controls are constructed.
- Temporary slope breakers will be installed as described in the POD. In the event that soils are frozen and prevent construction of slope breakers, other erosion control measures will be utilized (such as trench interceptor excavated across slope, mulching, silt fence, straw bales, sandbags, etc.).
- Ruby will stabilize subsoil and topsoil piles, using appropriate erosion controls, for subsequent final clean-up in the spring when conditions permit. Silt fences or staked straw bales will be installed where the disturbed ROW intersects with minor and major drainage areas. Silt fences will be installed on the edges of the disturbed ROW, perpendicular to the drainage area or wetland crossing area. Water flow direction and volumes expected during spring melt and heavy spring rains will be taken into account when Ruby installs erosion controls devices.
- Mulching will be used to stabilize soil surfaces where reclamation has not been completed. If site conditions require, soil tackifiers will be used to help stabilize soil surfaces.
- Depending on field conditions, temporary bridges and mats may be removed before the contractor leaves the ROW for the winter. Temporary bridges may need to be reinstalled before construction resumes. Temporary bridges that are removed may be stored on the ROW in a secure upland area near the crossing. Any equipment crossings remaining in place will be engineered to handle maximum predicted spring runoff flows and must be approved by the Army Corps of Engineers and the Federal Energy Regulatory Commission (FERC), as well as the relevant land management agency or landowner.

#### **2.4.1 Temporary Erosion and Sediment Control Measures**

Ruby will utilize any or all of the temporary erosion and sediment control measures identified below. The EIs will be responsible for maintaining all erosion control devices along the ROW and access roads.

- Silt fence backed by straw bales (weed free),
- Wire backing,
- Sediment pits or basins at the bottoms of steep/side slopes,
- Sediment logs,
- Waterbars reinforced and with drainage off ROW,
- Sand bag walls (diversions),
- Erosion control blankets,
- Construction mats placed on end to create wall (only in very specific locations),
- Large diversion ditches,
- Geotextile fabric in some locations,
- Removal of flumes in waterbodies (ditch must be closed),
- Very few open trenches,
- Safety fence around open trenches,
- Additional temporary ECDs at waterbodies,
- Double or triple layered straw bales staked and keyed in, and
- In some areas, the slope breakers will consist of material erosion control devices and not just soil (e.g., steep slopes with sensitive resources at the toe of the slope).

#### **2.4.1.2 Sensitive Fish Waterbodies**

At waterbodies containing sensitive fish, Ruby will utilize any or all of the temporary erosion and sediment control measures identified below:

- Slope breakers;
- ECDs all the way across the ROW, with bridges closed out (if left in place);
- Removal of bridges on some waterbodies (it has been stipulated that these can be set off to the side;
- Stabilization of banks where bridges have been removed
  - Mulch/ erosion control blanket, and
  - If bridge can be left in place ensure the bridge above flood plain mark.

## **2.5 Lowering-in and Backfill**

The following requirements and/or recommendations will be implemented during lowering-in and backfilling activities during winter weather conditions.

- Prior to lowering-in of the pipeline, the pipeline trench will be cleared of snow, to the greatest extent practical.
- During backfill operations, precautions will be taken to limit the mixing of snow with spoil material. It is recognized that some mixing of snow and soil is unavoidable.
- The trench will be backfilled with unfrozen soils. The first several inches of frozen backfill may have to be removed from the spoil piles to accommodate this.

The remaining spoil material will be stabilized until the soils in the trench have thawed and any settlement has occurred. The settlement will be repaired after the soils have fully thawed, using the spoil that remains.

- Backfilling activities will immediately follow lowering-in activities to prevent the infill of snow over the lowered-in pipe.

## **2.6 Hydrostatic Testing: Dewatering**

The following measures will be implemented during hydrostatic testing activities that occur during winter construction periods.

- The temperature of the hydrostatic test water will be continuously monitored to determine if additional precautions need to be employed to prevent damage to the pipeline or related facilities.
- Hydrostatic test water discharge locations will be monitored for icing and effectiveness of dewatering structures.

## **2.7 Access Road Usage and Maintenance**

The access roads identified by Ruby will be used during winter construction and will be maintained in accordance with permit and landowner requirements.

At the present time, the widths of all access roads have not been defined or finalized, as Notices to Proceed (NTPs) have not been completed or filed with Bureau of Land Management (BLM). The NTPs request, among other aspects, approval of commencement of pipeline construction in ROWs identified in each NTP, along with the construction/use of specific access roads to be used in connection with construction activities for pipeline segment(s) defined in each NTP. These access roads will vary in width depending on environmental resources occurring along the road.

As indicated in the Final Environmental Impact Statement for Ruby, the BLM will not allow construction equipment to create ruts deeper than 4 inches on access roads on BLM-administered land. Construction would be required to stop when ruts exceed 4 inches deep or until remediation can be implemented and the risk of rutting eliminated. During winter construction, the BLM will allow Ruby to implement the following remediation measures to eliminate or repair ruts in excess of 4 inches.

- Within the approved access road width, the road will be graded and/or bladed to repair the ruts.
- On gravel roads, additional gravel will be added if required to support construction activities. Gravel would be added within the approved access road.

Once winter work is complete for sections of the pipeline, Ruby will discontinue snow removal along those access roads. However, these areas will be monitored and repaired as needed after completion of construction activities on each spread.

### **2.7.1 Erosion Control Measures During Spring Thaw**

During the spring, the melting snow cover will cause the ground to thaw and become saturated, thus increasing the potential for erosion/sedimentation. These sites will be inspected to determine if maintenance or remedial erosion/sediment control measures need to be implemented for the affected site.

Areas requiring maintenance or remedial activities will be repaired as soon as possible, but in no case more than one week from the time the issue is identified. This will provide adequate time for Ruby to coordinate with its contractor and to mobilize crews to the locations requiring repairs. Best management practices will be implemented to ensure that repairs result in increased protection against erosion and sedimentation during spring runoff.

The following precautionary measures will be implemented when working during spring:

- Restrict construction traffic to low ground pressure equipment to avoid “pumping” of the ground.
- Install mats or geotextiles in problem areas as needed. Preference will be given to minimal disturbance methods of surface stabilization, such as mats, that can be removed following construction.
- Install siltation barriers, such as silt fences and straw bales, during construction in sites where access roads and water have close contact for long periods.
- Inspect and repair erosion control measures on a regular basis to ensure that they remain functional.
- Suspend construction activities in affected areas until soil conditions have improved or repairs have been completed.
- Divert runoff water away from access roads when slopes exceed 10 percent. Install runoff water diversion devices to channel surface water away from access roads. Take preventive measures to avoid channeled runoff water from entering sensitive areas (e.g., pygmy rabbit colonies or cultural sites). Runoff water will be diverted before any stream crossing and allowed to drain into upland areas.

## **2.8 Spring Thaw Conditions**

The following requirements will be implemented when work is performed during spring thaw conditions, defined as when the ground is thawing (frost is leaving the ground) and snow is melting.



- Work will occur only in non-problem areas, such as dry, well drained sites or shaded and frozen areas, until conditions improve.
- Frost inducement measures, such as snow packing to increase the load bearing capacity of the ground, will be employed. Frost inducement measures will be employed in the evening or early morning to take advantage of freezing temperatures.



## 3.0 Environmental Management

Ruby is committed to executing its Winter Construction Plan and performing the construction of the entire Project in such a manner as to ensure environmental protection, compliance with all conditions of the FERC certificate, compliance with other permit conditions, and the safety of workers and the public. Ruby will reinforce these commitments through inspection, training, and reporting procedures, as summarized below.

### 3.1 Winter Inspection and Monitoring Procedures

Ruby will maintain at least one EI for each spread to oversee winter pipeline construction activities, in addition to a chief and other craft inspector(s) as required. The extent of inspections will be based on duration of construction, precipitation events, runoff amounts, and thawing.

The EI will coordinate with the appropriate agencies as necessary regarding spring remediation activities. The EI will work closely with the construction inspectors, the contractor, and Ruby management to ensure that activities remain in compliance with Project permits and conditions, corrective actions are promptly initiated in non-compliance situations, and appropriate action is taken in the event of other external factors such as major storm events.

Inspection of the ROW and all access roads will be prioritized based on weather conditions and precipitation amounts (i.e., significance and duration of periods of thaw and runoff) and the actual schedule of construction work activities. In areas where the contractor has completed work and demobilized for the winter, after necessary erosion controls are put in place and approved by the EI, the ROW and associated access roads may only be inspected monthly. Once the soil becomes frozen and snow-covered, the need for frequent inspection is reduced because ROW conditions either will not be visible or will be stabilized in a frozen state. When inspections are conducted, they may consist of ground or aerial surveys; will focus principally on areas with steep slopes, wetlands, roads, and waterbody crossings; and will identify:

- Erosion control structures requiring repair, including those associated with access roads;
- Roads needing repair or maintenance;
- Areas of slope instability; and
- Areas where significant levels of erosion are occurring.

### 3.2 Training

Project personnel involved in winter construction, including construction crews, EIs, and Compliance Monitors, will be required to participate in a focused environmental training program presented by Ruby that will address winter environmental requirements and responsibilities specific to this Plan. This training will be supplemented with tailgate briefings provided by the EI.

### 3.3 Staffing and Contacts

If the Plan requires implementation, Ruby has identified the personnel presented in Table 3-1 as points of contact.

**Table 3-1 Winter Construction Contact Information**

<b>Name</b>	<b>Role</b>	<b>Location</b>	<b>Contact Number</b>
Lars Ecklund	Pipeline Project Coordinator – West	Winnemucca, NV	970-261-5470
Dave Smith	Pipeline Project Coordinator – East	Salt Lake City, UT	970-261-0481
Jackie Padgett	Environmental Project Coordinator Environmental Inspector	Salt Lake City, UT	409-828-2366
Dave Hagen	Environmental Project Coordinator Compliance Monitors	Denver, CO	612.810.2595

### 3.4 Reporting

Ruby will discuss winter construction activities as required in the weekly FERC status report to keep the involved agencies informed of the progress of construction activities, incidents involving potential non-compliance, or other problems and corrective actions taken or scheduled.